L Number	Hits	Search Text	DB	Time stamp
2	73	((rare adj gas) with (doping or implanting)) not (semiconductor adj energy adj laboratory)	USPAT; US-PGPUB	2003/05/16 15:36
3	51	(((rare adj gas) with (doping or implanting)) not (semiconductor adj energy adj laboratory)) and @ad<=20010118	USPAT; US-PGPUB	2003/05/16 15:35
4	27	((rare adj gas) with (doping or implanting)) not (semiconductor adj energy adj laboratory)	EPO; JPO; DERWENT; IBM_TDB	2003/05/16 15:28
5	240	((He or Ne or Ar or Kr or Xe) with (doping or implanting)) not (semiconductor adj energy adj laboratory)	EPO; JPO; DERWENT; IBM_TDB	2003/05/16 14:55
6	2	(((He or Ne or Ar or Kr or Xe) with (doping or implanting)) not (semiconductor adj energy adj laboratory)) and tft	EPO; JPO; DERWENT; IBM_TDB	2003/05/16 14:54
7	394	((He or Ne or Ar or Kr or Xe) with (doping or implanting)) not (semiconductor adj energy adj laboratory)	USPAT; US-PGPUB	2003/05/16 14:55
8	318	(((He or Ne or Ar or Kr or Xe) with (doping or implanting)) not (semiconductor adj energy adj laboratory)) and @ad<=20010118	USPAT; US-PGPUB	2003/05/16 15:04
9	12	((((He or Ne or Ar or Kr or Xe) with (doping or implanting)) not (semiconductor adj energy adj laboratory)) and @ad<=20010118) and tft	USPAT; US-PGPUB	2003/05/16 14:56
10	306	((((He or Ne or Ar or Kr or Xe) with (doping or implanting)) not (semiconductor adj energy adj laboratory)) and @ad<=20010118) not (((((He or Ne or Ar or Kr or Xe) with (doping or implanting)) not (semiconductor adj energy adj laboratory)) and @ad<=20010118) and tft)	USPAT; US-PGPUB	2003/05/16 15:03
11	1187	438/166,473,162,486,508.ccls.	USPAT; US-PGPUB	2003/05/16 15:04
12	936	438/166,473,162,486,508.ccls. and @ad<=20010118	USPAT; US-PGPUB	2003/05/16 15:05
13	926	(438/166,473,162,486,508.ccls. and @ad<=20010118) not ((((He or Ne or Ar or Kr or Xe) with (doping or implanting)) not (semiconductor adj energy adj laboratory)) and @ad<=20010118)	USPAT; US-PGPUB	2003/05/16 15:04
14	926	((438/166,473,162,486,508.ccls. and @ad<=20010118) not ((((He or Ne or Ar or Kr or Xe) with (doping or implanting)) not (semiconductor adj energy adj laboratory)) and @ad<=20010118)) not ((((rare adj gas) with (doping or implanting)) not (semiconductor adj energy adj laboratory)) and @ad<=20010118)	USPAT; US-PGPUB	2003/05/16 15:04
15	336	257/65,70,75.ccls.	USPAT; US-PGPUB	2003/05/16 15:05
16	297	257/65,70,75.ccls. and @ad<=20010118	USPAT; US-PGPUB	2003/05/16 15:36
17	272	(257/65,70,75.ccls. and @ad<=20010118) not (((438/166,473,162,486,508.ccls. and @ad<=20010118) not ((((He or Ne or Ar or Kr or Xe) with (doping or implanting)) not (semiconductor adj energy adj laboratory)) and @ad<=20010118)) not ((((rare adj gas) with (doping or implanting)) not (semiconductor adj energy adj laboratory)) and @ad<=20010118))	USPAT; US-PGPUB	2003/05/16 15:05
18	0	(eaton adj corp) and matthew and (rare adj gas)	USPAT; US-PGPUB	2003/05/16 15:29
19	1	eaton and matthew and (rare adj gas)	USPAT; US-PGPUB	2003/05/16 15:31
20	0	eaton and qwinn and (rare adj gas)	USPAT; US-PGPUB	2003/05/16 15:31

exhausted search

21	7	eaton and charles and (rare adj gas)	USPAT; US-PGPUB	2003/05/16 15:31
22	339	(rare adj gas) and (crystallization or crystallizing)	USPAT; US-PGPUB	2003/05/16 15:39
23	118	((rare adj gas) and (crystallization or crystallizing)) and tft	USPAT; US-PGPUB	2003/05/16 15:36
24	61	(((rare adj gas) and (crystallization or crystallizing)) and tft) not (semiconductor adj energy adj laboratory)	USPAT; US-PGPUB	2003/05/16 15:36
25	15	((((rare adj gas) and (crystallization or crystallizing)) and tft) not (semiconductor adj energy adj laboratory)) and @ad<=20010118	USPAT; US-PGPUB	2003/05/16 15:36
26	23	(rare adj gas) and (crystallization or crystallizing)	EPO; JPO; DERWENT; IBM_TDB	2003/05/16 15:39

L3

	U	1 [1]	Document ID	Issue Date	Pages	Title	Current OR
1	☐	☒	US 6461939 B1	20021008	11	SOI wafers and methods for producing SOI wafer	438/459
2	☐	☒	US 6417108 B1	20020709	21	Semiconductor substrate and method of manufacturing the same	438/690

L4

	U	1 [1]	Document ID	Issue Date	Pages	Title	Current OR
1	☐	☒	JP 11087261 A	19990330	7	METHOD AND SYSTEM FOR ION IMPLANTING OF LOW DOSAGE AMOUNT	

	Current XRef	Retrieval Classif	Inventor	S	C	P	2	3	4	5	Image Doc. Displayed	PT
1			GWINN, MATTHEW CHARLES	☒	☐	☐	☐	☐	☐	☐	JP 11087261 A	☐

US-PAT-NO: 6417108

DOCUMENT-IDENTIFIER: US 6417108 B1
See image for Certificate of Correction

TITLE: Semiconductor substrate and method of manufacturing the same

---------- KWIC ---------

Application Filing Date - AD (1):
19990128

Detailed Description Text - DETX (13):
The method disclosed in Japanese Patent Application Laid-Open No. 5-211128 and U.S. Pat. No. 5,374,564 comprises steps of forming a silicon oxide layer on the surface of a single crystal silicon wafer substrate, **implanting** either hydrogen gas ions or **rare gas** ions into the wafer from the side of the silicon oxide layer, forming a micro-bubble layer in the single crystal silicon wafer, bonding the wafer to another substrate operating as support member at the side of the silicon oxide and then separating the bonded substrates along the micro-bubble layer to produce an SOI substrate. Then, this SOI substrate may be used to prepare a semiconductor substrate as described above by referring to the first embodiment of the invention.

Claims Text - CLTX (6):
forming a silicon oxide layer on the surface of a single crystal silicon

wafer substrate, forming a micro-bubble layer in the inside of said single crystal silicon wafer by **implanting** ions selected from hydrogen ions and **rare gas** ions from the side of said silicon oxide layer and bonding said silicon oxide layer to a separate support member, said steps being conducted prior to said step of removing extreme portions.

Claims Text - CLTX (18):

17. A method according to claim 10, further comprising steps of forming a silicon oxide layer on the surface of a single crystal silicon wafer substrate which is to become the support member, forming a micro-bubble layer in the inside of the single crystal silicon wafer by **implanting** ions selected from hydrogen ions and **rare gas** ions from the side of the silicon oxide layer, and bonding the silicon oxide layer to a separate support member, said further steps being conducted prior to said steps of removing extreme portions.

Claims Text - CLTX (19):

18. A method according to claim 11, further comprising steps of forming a silicon oxide layer on the surface of a single crystal silicon wafer substrate which is to become the support member, forming a micro-bubble layer in the inside of the single crystal silicon wafer by **implanting** ions selected from hydrogen ions and **rare gas** ions from the side of the silicon oxide layer, and bonding the silicon oxide layer to a separate support member, said further steps being conducted prior to said steps of removing extreme portions.

PAT-NO: JP411087261A

DOCUMENT-IDENTIFIER: JP 11087261 A

TITLE: METHOD AND SYSTEM FOR ION IMPLANTING OF LOW DOSAGE AMOUNT

PUBN-DATE: March 30, 1999

INVENTOR-INFORMATION:
NAME
GWINN, MATTHEW CHARLES

ASSIGNEE-INFORMATION:
NAME COUNTRY
EATON CORP N/A

APPL-NO: JP10190125

APPL-DATE: July 6, 1998

INT-CL (IPC): H01L021/265, C23C014/48 , H01J037/317

ABSTRACT:

PROBLEM TO BE SOLVED: To provide a method and a system for implanting ions

at low dosage, while enabling accurate and stable control.

SOLUTION: This ion implantation system is constituted of an ion source 12 for ionizing a diluent, i.e., a **rare gas,** and a specified dopant gas an **implanting** the ions into a substrate S. Since the **rare gas** does not react with the dopant gas not with the residue of dopant covering the inner wall of an ion chamber 24, ions can be implanted accurately and stably at a low dosage. Furthermore, since the rare gas does not introduce ions or impurities which cause fluctuations of conductivity into the substrate, dosage of dopant ions being implanted into the substrate S is controlled accurately, especially when a low dosage is applied.

US-PAT-NO: 6057213

DOCUMENT-IDENTIFIER: US 6057213 A

TITLE: Methods of forming polycrystalline semiconductor layers

---------- KWIC ---------

Claims Text - CLTX (10):

6. The method of claim 5, wherein said step of **implanting** ions comprises **implanting** ions selected from the group consisting of Si, **He, Ne,** H and **Ar**.

US-PAT-NO: 6451672

DOCUMENT-IDENTIFIER: US 6451672 B1
See image for Certificate of Correction

TITLE: Method for manufacturing electronic devices in semiconductor substrates provided with gettering sites

---------- KWIC ---------

Brief Summary Text - BSTX (10):
More recently, the prior art proposed that microvoids be produced in the semiconductor substrate by subjecting it to a step of **implanting** light ions of a noble gas, such as helium (**He**). These ions are highly permeable through silicon and implanted at a high concentration (>5.times.10.sup.15 atoms/cm.sup.2) and low energy, such that gas bubbles are produced within the crystalline structure.

Brief Summary Text - BSTX (18):
An example of a different application of microvoids produced by **implanting** **He** ions is known as a life span controlling technique and described in European Patent Application No. 0694960 by Co.Ri.M.Me., and herein incorporated by reference, which discloses a process for producing microvoids from helium bubbles implanted beneath the active areas of an integrated electronic device.

L=25

US-PAT-NO: 5177578

DOCUMENT-IDENTIFIER: US 5177578 A

TITLE: Polycrystalline silicon thin film and transistor using the same

---------- KWIC ---------

Detailed Description Text - DETX (8):
To the above film forming gas and etching gas, inert gas such as **rare gas,** preferably, helium, neon, argon, hydrogen, etc. may be added as a diluent gas. The diluent gas is preferably used in a proportion of 1-1000 times, or more preferably 5-100 times, as much as the etching gas.

use as dilute gas